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TRANSMITTAL OF APPEAL BRIEF (Large Entity)	Docket No. LEAP:135US
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In Re Application Of: **Bonaventura et al.**

Application No. 10/811,345	Filing Date 03/26/2004	Examiner Joshua L. Pritchett	Customer No. 24041	Group Art Unit 2872	Confirmation No. 1573
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Invention: **HEAT SINK ASSEMBLY FOR A MICROSCOPE**

COMMISSIONER FOR PATENTS:

Transmitted herewith is the Appeal Brief in this application, with respect to the Notice of Appeal filed on:
September 6, 2006

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/C. Paul Maliszewski/

Signature

Dated: **October 11, 2006**

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U.S. Patent Application No.: 10/811,345

Confirmation No.: 1573

Applicant(s): BONAVENTURA, Russell; HARRISON, Paul M.; NORTHEM, Kenneth M.;
and PARKS, Scott, W.

For: HEAT SINK ASSEMBLY FOR A MICROSCOPE

Examiner: Joshua L. PRITCHETT

Filed: March 26, 2004

TC/Art Unit: 2872

Docket No.: LEAP:135US

Customer No.: 24041

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APPEAL BRIEF UNDER 37 C.F.R. § 41.37

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Honorable Sir:

Appellants respectfully appeal the decision of the Examiner finally rejecting Claims 2-34 and 36-52 as set forth in the Office Action dated June 14, 2006. A Notice of Appeal was timely filed by the Appellants on September 6, 2006.

A **Claims Appendix** follows page 20 of this paper.

An **Evidence Appendix** follows page 27 of this paper.

A **Related Proceedings Appendix** follows page 29 of this paper.

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REAL PARTY IN INTEREST

The real party in interest is Leica Microsystems CMS GmbH, Assignee of the above application by assignment recorded in the Patent and Trademark Office on April 26, 2006 at Reel 017575, Frame 0731.

RELATED APPEALS AND INTERFERENCES

Upon information and belief, no appeals or interferences are known to Appellants, which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

STATUS OF CLAIMS

The application originally contained 50 claims.

Claims 1 and 35 have been canceled.

Claims 51 and 52 were added.

Claims 2-34 and 36-52 stand as finally rejected.

Claims 2-34 and 36-52 are the subject of this Appeal.

STATUS OF AMENDMENTS

There are no amendments filed subsequent to final rejection.

SUMMARY OF THE CLAIMED INVENTION

The invention relates generally to a heat sink assembly for a microscope including a baffle plate located proximate an air inlet of a microscope and a heat sink located proximate the baffle plate. The baffle plate is arranged to enable the passage of air through the air inlet while occluding the emanation of light from the microscope through the air inlet. The baffle plate and heat sink are arranged to induce airflow through the baffle plate, across the heat sink, and out an air outlet for the microscope.

1. Claim 4

Claim 4 recites microscope 10 (pages 4 and 5, paragraphs 0015 and 0016 and Figures 1-3 and 6) with air inlet 40 (page 5, line 24 and Figures 5, 6, and 7a) and illumination source 50 (page 6, line 22 and Figure 6), heat sink assembly 29, (page 5, lines 21 and 22 and Figures 4-6) with baffle 33 (page 5, line 22 and Figures 5, 7a, and 7b) located proximate the air inlet. The microscope also includes lens 18 (page 7, line 5 and Figure 7a) secured to the heat sink assembly and a plurality of fins 30 (page 7, line 7 and Figures 4, 5, 7a, and 8-11) formed at the heat sink assembly. The plurality of fins is operatively arranged to conduct heat away from the illumination source and to transfer the heat to air passing by or over the assembly (page 7, paragraph 0026 and Figures 6 and 7a). The baffle is operatively arranged to deflect air entering the microscope via the inlet and to occlude the emanation of light from the illumination source through the air inlet (page 5, lines 24-28, page 6, paragraph 0024, and Figure 7a). The heat sink assembly and the lens are arranged to protect, from all directions, the illumination source from direct physical intrusion from outside the microscope (Figures 1-7a).

2. Claim 15

Claim 15 recites microscope 10 with air inlet 40, and fixed baffle assembly 33 located proximate the air inlet. As described for Claim 4, the baffle assembly is operatively arranged to divert air entering said microscope via said inlet and to occlude the emanation of light from said microscope through said air inlet.

3. Claim 30

Claim 30 recites heat sink assembly 29 for microscope 10 including fixed baffle 33 located proximate air inlet 40 of the microscope and operatively arranged to deflect air that enters the microscope via the inlet, as described for Claim 4. Microscope 10 includes illumination source 50 and the baffle occludes the emanation of light from the illumination source through the inlet as described for Claim 4. Also, assembly 29 includes heat sink 28 located proximate the baffle and operatively arranged to transfer heat to the air (page 5, lines 22-24, page 6, paragraph 0024, and Figures 4-7a and 8-11).

4. Claim 51

Claim 51 recites microscope 10 having air inlet 30, illumination source 50, and fixed baffle assembly 33 operatively arranged to divert air entering the microscope via inlet 40 and to occlude all direct emanation of light from the illumination source through the air inlet, as described for Claim 4.

5. Claim 52

Claim 52 recites heat sink assembly 29 for microscope 10 including fixed baffle assembly 33 operatively arranged to deflect air that enters the microscope via air inlet 40 and to occlude all direct emanation of light from illumination source 50 in the microscope through the air inlet, as described for Claim 4. Assembly 29 also includes heat sink 28 located proximate the baffle and operatively arranged to transfer heat to the air, as described for Claim 30.

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

1. Whether Claims 2-12, 14-24, 26-34, 36-43, and 46-52 are non-obvious under 35 U.S.C. §103(a) to a person having ordinary skill in the art at the time the invention was made and therefore patentable over U.S. Patent No. 5,295,052 (Chin) in view of U.S. Patent No. 5,076,660 (Messinger)?

2. Whether Claims 13, 25, 44, and 45 are non-obvious under 35 U.S.C. §103(a) to a person having ordinary skill in the art at the time the invention was made and therefore patentable over U.S. Patent No. 5,295,052 (Chin) in view of U.S. Patent No. 5,076,660 (Messinger) as applied to Claims 5, 17, and 36 above, and further in view of U.S. Patent No. 6,698,200 (Rauen)?

ARGUMENT

1. Whether Claims 2-12, 14-24, 26-34, 36-43, and 46-50 are non-obvious under 35 U.S.C. §103(a) to a person having ordinary skill in the art at the time the invention was made and

therefore patentable over U.S. Patent No. 5,295,052 (Chin) in view of U.S. Patent No. 5,076,660 (Messinger)?

A) Summary of the Rejection:

The Examiner rejected Claims 2-12, 14-24, 26-34, 36-43, and 46-52 under 35 USC §103(a) as being unpatentable over U.S. Patent No. 5,295,052 (Chin) in view of U.S. Patent No. 5,076,660 (Messinger).

1) Regarding independent Claim 4, the Examiner asserted in the Office Action dated June 14, 2006, hereafter referred to as the Office Action:

“Regarding claim 4, Chin teaches an air inlet (112); an illumination source (34); a heat sink assembly (80) including a lens (col. 1 lines 40-50) secured to the heat sink assembly and the heat sink arranged to protect the illumination source from direct physical intrusion (Fig. 2) and a plurality of fins (Fig. 5) formed at the heat sink assembly and operatively arranged to conduct heat away from the illumination source and to transfer the heat to air passing by or over the assembly (col. 2 lines 55-60). The illumination source in Chin is protected from direct physical intrusion from all directions from outside the microscope because a person could not stick an object into the system in a straight line and contact the illumination source (Fig. 2). Chin lacks specific reference to a microscope. Chin does state that the device is used for medical/surgical applications (abstract). It is extremely well known in the art to use microscopes in combination with light sources for medical/surgical applications. Official Notice is taken. Chin further lacks reference to a baffle directing the airflow. Messinger teaches the heat sink assembly (abstract) comprising a baffle (15, 19 and partitions shown in Fig. 1) located proximate the air inlet (Fig. 1) and operative arranged to deflect air entering via the inlet and to occlude the emanation of light from (sic) the source through the air inlet (Fig. 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Chin light source used in combination with a microscope as suggested by Chin for the purpose of allowing surgery to be performed on parts of the body too small to be easily observed with the naked eye. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Chin invention include the baffles of Messinger for the purpose of greater cooling efficiency of the heat sink assembly.”

Claims 2, 3, and 5-12, and 14 depend from Claim 4, therefore, in the interest of brevity, Appellants have not presented assertions made by the Examiner regarding these dependent claims.

2) Regarding independent Claims 15, 30, 51, and 52 the Examiner asserted:

“Regarding claims 15, 16, 26, 30 and 47-52, Chin teaches an illumination source (34); a heat sink assembly (80) surrounding the illumination source (Fig. 5) and a plurality of fins (Fig. 5) formed at the heat sink assembly and operatively arranged to conduct heat away from the illumination source and to transfer the heat to air passing by or over the assembly (col. 2 lines 55-60). Chin lacks specific reference to a microscope. Chin does state that the device is used for medical/surgical applications (abstract). It is extremely well known in the art to use microscopes in combination with light sources for medical/surgical applications. Official Notice is taken. Chin further lacks reference to the use of baffles. Messinger teaches the heat sink assembly (abstract) comprising a fixed baffle (19 and partitions shown in Fig. 1) located proximate the air inlet (Fig. 1) and operative arranged to deflect air entering via the inlet and to occlude the emanation of light form (sic) the source through the air inlet (Fig. 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Chin invention include the baffles of Messinger for the purpose of greater cooling efficiency of the heat sink assembly. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Chin light source used in combination with a microscope as suggested by Chin for the purpose of allowing surgery to be performed on parts of the body too small to be easily observed with the naked eye.”

Claims 16-24 and 26-29 depend from Claim 15, therefore, in the interest of brevity, Appellants have not presented assertions made by the Examiner regarding these dependent claims. Claims 31-34, 36-43, and 44-50 depend from Claim 30, therefore, in the interest of brevity, Appellants have not presented assertions made by the Examiner regarding these dependent claims.

Appellants respectfully request reversal of the Examiner's rejection of Claims 2-12, 14-24, 26-34, 36-43, and 46-52 for the reasons set forth below.

B) Brief description of the references cited by the Examiner

For purposes of providing background, Appellants briefly discuss the references cited and relied upon by the Examiner.

1) Chin

Chin teaches a chassis for a light source for medical/surgical applications including a lamp assembly 80 having a support plate 62 slidable through a housing door into chassis mounted rails or slides on guide member 64 and having fixed thereon lamp heat sinks 36, 38, and 40 having the form of mounting plates 61 with heat dispersing fins projecting therefrom. The supporting plate further includes or supports plugs which mate with corresponding plugs in the rear as the plate is inserted on the rails and pushed back onto stops, providing secure, aligned positioning. The heat sinks that hold the lamp in position are slotted so as to resiliently secure and electrically contact the lamp under the action of first and second resilient clamps 50 and 52 which position the lamp in predetermined alignment and allow for thermal expansion, for example, of the sapphire window.

2) Messinger

Messinger discloses a fiberoptic bundle or liquid light guide 3 for a borescope, fiberscope or videoscope coupled to light source 2 using a light guide coupler 5 having a plurality of air passages to vent excess heat. The illumination unit comprises a fan that draws cool air through the passages into the light source to remove excess heat from the light guide coupler. Heat radiators can be added to the coupler to increase its surface area and to improve heat dissipation. Air baffles can be added to optimize the air flow through the light guide coupler. The light guide coupler thus acts as a heat sink while dissipating excess heat using an air flow caused by the difference in air pressure created by the fan in the illumination unit.

C) Arguments regarding the rejection of Claims 2-12, 14-24, 26-34, 36-43, and 46-52

"To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in knowledge generally available to one having ordinary skill in the art, to modify the reference or

combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or the references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure." MPEP § 2142 (citing *In re Vaeck*, 20 USPQ2d 1438 (Fed. Cir. 1991))

1) Claim 4

a) Chin and Messinger do not teach or suggest all the claimed limitations

(1) The rejection is directed to a structure not recited in Claim 4

Claim 4 recites: "...said *baffle* is operatively arranged to deflect air entering said microscope via said inlet and to occlude the emanation of light from said illumination source through said air inlet..." (emphasis added). Thus, Claim 4 recites a baffle arranged to occlude light. In the rejection under consideration, the Examiner has directed his arguments to a structure not recited in Claim 4, namely a baffle and a passageway.

For example, in the Response to Arguments for the Office Action, the Examiner stated: "As stated in the rejection the partitions in the passage are included as baffles therefore *the configuration of the passage that includes the partition occludes light from the inlet* as admitted by the applicant." The Examiner is citing a partition/passageway structure that is not recited in Claim 4.

In an Advisory Action dated August 14, 2006, hereafter referred to as the Advisory Action, the Examiner stated: "*The partitions in conjunction with the passageway, as defined by the applicant, act to prevent light emanating from the source 1 through the air inlet 9*. The location of the partitions and the passageway would act to prevent light from traveling around the partitions, turning a first corner, up the passageway, turning a second corner, further along the passageway and finally turning again to exit through the air inlet." (emphasis added).

Again, the Examiner is arguing a partition/passageway structure not recited in Claim 4.

(2) Messinger's baffles do not occlude the emanation of light from the inlet

In the Office Action, the Examiner stated: "Messinger teaches the heat sink assembly (abstract) comprising a baffle (15, 19 and partitions shown in Fig. 1) located proximate the air inlet (Fig. 1) and operatively arranged to deflect air entering via the inlet and to occlude the emanation of light from the source through the air inlet (Fig. 1)."

Appellants have attached a copy of Fig. 1 as Exhibit 1 to the Evidence Appendix to illustrate the following arguments. It is clear that significant amounts of light pass through the partitions and baffles to enter the passageway (labeled A by Appellants) to inlet 9. For example, light beams B and C, drawn in red by Appellants, pass through the partitions. Thus, the passageway is absolutely critical and necessary to provide any prevention of light emanations from inlet 9 that may occur. For example, the configuration of passageway A causes changes in direction for a light beam entering the passageway. Thus, passageway A causes attenuation of the light entering the passageway. For example, light beams B and C streaming past the partitions and baffles must make three 90 degree turns in the passageway in order to exit through inlet 9. The partitions and baffles may limit the amount of light entering the passageway, however, without the passageway; there would be no attenuation of the light bypassing the partitions and baffles. For example, if inlet 9 were placed directly to the right of the partitions in Fig. 1, that is, the passageway is removed from between the partitions and the inlet, it is clear that significant amount of light would reach and emanate from inlet 9. For purposes of illustration, this hypothetical location of the inlet is marked "D" in Exhibit 1.

In the Response to Arguments for a March 31, 2006 Office Action, the Examiner stated that Applicants' arguments were based on the hypothetical changing of the orientation of Messinger. This is incorrect. Applicants did not state that it was necessary to change the orientation of Messinger. Rather, for purposes of illustration, Applicants stated that a hypothetical movement of inlet 9 more clearly showed that significant amounts of light pass through the partitions and baffles of Messinger to enter the passageway to inlet 9. Thus, as shown *supra*, assuming *arguendo* that light emanations from inlet 9 are prevented, that

prevention would be a result of the configuration of the passage between the partitions and the inlet, a limitation not recited in Claim 4, and the changes in direction for a light beam dictated by this configuration. The prevention of emanation cannot be due to the partitions and baffles, which clearly allow light to pass. Alternately stated, the partitions and baffles themselves do not occlude light, the partitions and baffles merely limit the passage of light. It is not necessary to move inlet 9 for Messinger to fail to teach, suggest or motivate the partitions occluding light from the inlet.

(3) The Examiner has admitted that the passageway in Messinger is necessary to prevent the emanation of light from the inlet

In the Response to Arguments for the Office Action, the Examiner stated: "As stated in the rejection the partitions in the passage are included as baffles therefore *the configuration of the passage that includes the partition occludes light from the inlet* as admitted by the applicant." (emphasis added). In the italicized portion above, the Examiner admits that the configuration of the passageway prevents the emanation of light. However, Claim 4 recites a baffle arranged to occlude light. Claim 4 does not recite a combination of a baffle and a passageway arranged to occlude light.

Further, Appellants have not made the admission noted *supra*. In the May 11, 2006 Amendment and Request for Reconsideration to which the Examiner refers in the preceding quote, Appellants stated: "That is, assuming *arguendo* that light is occluded from inlet 9, that occlusion would be a result of the configuration of the passage between the partitions and the inlet and the changes in direction for a light beam dictated by this configuration." Thus, Appellants did not admit that light was occluded from inlet 9 and certainly did not admit that light is occluded by baffles in Messinger. For purposes of argument, Appellants supposed that such occlusion might be possible and clearly stated that such occlusion would be due to the configuration of the passageway.

In the Advisory Action, the Examiner stated:

"Applicant further argues the baffles of Chin do not occlude light from emanation from the illumination source through the air inlet. Examiner previously stated the air

inlet was element 9 shown in Fig. 1 of Messinger. Applicant has not traversed this statement. The three partitions shown in Fig. 1 are baffles as interpreted by the examiner. The first partition extends from the lower left corner of the power supply as shown in Fig. 1. The second partition is located between the two arrows indicating air flow that curve into the area of the light source. The third partition extends from the outer wall 20 in line with the other two partitions. The term baffle means to deflect or regulate flow. The curvature of the arrows and the location of the arrows (between the partitions) show that the partitions act to deflect or regulate flow of the air. Therefore the partitions are baffles. The partitions in conjunction with *the passageway*, as defined by the applicant, *act to prevent light emanating from the source 1 through the air inlet 9*. The location of the partitions and the passageway would act to prevent light from traveling around the partitions, turning a first corner, up the passageway, turning a second corner, further along the passageway and finally turning again to exit through the air inlet.” (emphasis added).

The Examiner describes the movement of light through the passageway, which is completely independent from the partitions, and again is admitting that the passageway, not the partitions, prevent the emanation of light. Further, the Examiner is admitting that light passes through the partitions. Claim 4 does not recite a combination of baffles and passageways arranged to prevent emanation of light from an air inlet. Claim 4 recites a baffle arranged to occlude light.

(4) Messinger’s partitions and baffles are not proximate the air inlet

Claim 4 recites: “a heat sink assembly with a baffle located proximate said air inlet;” In the Response to Arguments in the Office Action, the Examiner stated: “The examiner maintains that within the broadest reasonable interpretation of , 'proximate" the baffles of Messinger are proximate to the air inlet.” Appellants disagree. The Merriam-Webster Dictionary defines “proximate” as “very near.” This definition provides the plain meaning of proximate. “This means that the words of the claim must be given their plain meaning unless applicant has provided a clear definition in the specification. *In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) (discussed below); *Chef America, Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1372, 69 USPQ2d 1857 (Fed. Cir. 2004) (Ordinary, simple English words whose meaning

is clear and unquestionable, absent any indication that their use in a particular context changes their meaning, are construed to mean exactly what they say. See, e.g., *Liebel-Flarsheim Co. v. Medrad Inc.*, 358 F.3d 898, 906, 69 USPQ2d 1801, 1807 (Fed. Cir. 2004)."

However, some consideration can be given to the context in which the term is used. The baffle recited in Claim 4 is disposed directly on top of the air inlet as shown in Figures 5 through 7b of the present application. In contrast, assuming *arguendo* that Messinger's partitions and baffles are analogous to the baffle recited in Claim 4, within the context of Messinger's receptacle, the partitions and baffles are nowhere near inlet 9. In fact, within this context, the partitions and baffles are nearly as far from the inlet as is possible.

b) There is no suggestion or motivation, either in the references themselves or in knowledge generally available to one having ordinary skill in the art, to modify the reference or combine reference teachings

(1) Messinger is not analogous to the present invention

Messinger is teaching a light source for fiberoptic illumination. Fiberoptic illumination is not analogous to the microscope recited in Claim 4. In the Advisory Action, the Examiner stated: "Applicant further argues Messinger is not analogous art because Messinger is related to fiberoptic illumination not to a microscope. The thrust of the current invention is directed to a heat sink assembly. Intend the term microscope appears only in the preamble of the claim and even in the preamble includes no structural limitations to further define the microscope. Further the Messinger reference is used merely to teach modifications to the heat sink of Chin not to the lens structure or any other element of a microscope." Appellants disagree with the Examiner. The recitation of a microscope clearly provides a limitation as to the structure of the claimed invention. For example, the baffle recited in Claim 4 is limited by the recitation of a microscope of which the baffle is a part. "Any terminology in the preamble that limits the structure of the claimed invention must be treated as a claim limitation. See, e.g., *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1257, 9 USPQ2d 1962, 1966 (Fed. Cir. 1989)." See MPEP 2111.02.

(2) Messinger teaches against locating partitions and baffles proximate the air inlet

Messinger teaches separating the partitions and baffles from the inlet via the passageway. At most, Messinger's partitions may limit the amount of light entering the passageway, but in no way occlude light from entering the passageway. Thus, the partitions may act as a partial pre-filter for the passageway. To be effective, the partitions (pre-filter) must be located on the end of the passageway furthest from the air inlet. Therefore, Messinger's partitions are placed as shown in Fig. 1 of Messinger, relatively far from inlet 9 and outside of passageway A in Exhibit 1. "A *prima facie* case of obviousness can be rebutted if one of the cited references teaches away from the claimed invention. See *In re Geisler*, 43 U.S.P.Q. 2d 1362, 1366 (Fed. Cir. 1997)."

(3) There is no motivation to combine Chin and Messinger to form the claimed invention

Appellants respectfully submit that the Examiner has provided no rational basis for combining Chin and Messinger. Elements of separate patents cannot be combined when there is no suggestion of such combination. See *Panduit Corp. v. Dennison Manufacturing Co.*, 1 U.S.P.Q.2d 1593 (Fed. Cir. 1987). The recognized law for combining references to support the conclusion that the claimed combination of structural features is directed to obvious subject matter requires that either the references expressly or impliedly teach or suggest the claimed combination, or the Examiner must present a convincing line of reasoning as to why an artisan would have found the claimed invention to have been obvious in light of the teachings of the references. See e.g., *Ex parte Clapp*, 227 USPQ 972 (973) (PTO Br Pat. App. & Int. 1985); *In re Geiger*, 2 USPQ2d 1276 (CA, Fed. Cir. 1987). In the Office Action, the Examiner stated: "It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Chin light source used in combination with a microscope *as suggested by Chin* for the purpose of allowing surgery to be performed on parts of the body too small to be easily observed with the naked eye." (emphasis added). Appellants courteously submit that this line of reasoning appears to be motivated more by impermissible hindsight reconstruction, rather than a suggestion

or motivation from Chin. Specifically, Chin makes no suggestion regarding a microscope. In fact, the word “microscope” is not used anywhere in Chin. Further, Chin has no teaching, suggestion, or motivation regarding surgery too small to be easily observed with the naked eye. The Examiner has applied impermissible hindsight to provide the motivation to combine Chin with a microscope. “The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure.” *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

In the Office Action, the Examiner also stated: “It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Chin invention include the baffles of Messenger for the purpose of greater cooling efficiency of the heat sink assembly.” Appellants courteously submit that this line of reasoning appears to be motivated more by impermissible hindsight reconstruction, rather than a suggestion or motivation from Chin and Messenger. Messenger's baffles are located between an air inlet and a light source to be cooled. Therefore, adding Messenger's baffles to Chin can only restrict the air flow between Chin's air inlet and light source, reducing the cooling efficiency. Thus, Chin has every incentive to avoid adding airflow restrictions, such as Messenger's baffles, and subsequently, if anything, Chin teaches against adding airflow restrictions, such as Messenger's baffles. “The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure.” *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Thus, Appellants contend that the Examiner has applied impermissible hindsight reconstruction by rendering the invention obvious after having the benefit of a prior reading of Appellants' own disclosure. *See In re McLaughlin*, 443 F.2d 1392, 1395, 170 USPQ 209, 212 (CCPA 1971). Consequently, Appellants argue that no convincing line of reasoning is provided as a basis for modifying and combining Chin and Messenger independent of Appellants' own disclosure. Thus, the modification of Chin appears to be based on hindsight from a prior reading of Appellants' own disclosure and therefore cannot support a *prima facie* case of obviousness.

For all the reasons noted above, Claim 4 is patentable over Chin and Messinger. Claims 2, 3, 5-12, and 14, dependent from Claim 4 enjoy the same distinction with respect to Chin and Messinger.

2) Claims 15, 30, 51, and 52

In the Office Action, the Examiner stated: “Regarding claims 15, 16, 26, 30 and 47-52, Chin teaches an illumination source (34); a heat sink assembly (80) surrounding the illumination source (Fig. 5) and a plurality of fins (Fig. 5) formed at the heat sink assembly and operatively arranged to conduct heat away from the illumination source and to transfer the heat to air passing by or over the assembly (col. 2 lines 55-60). Chin lacks specific reference to a microscope. Chin does state that the device is used for medical/surgical applications (abstract). It is extremely well known in the art to use microscopes in combination with light sources for medical/surgical applications. Official Notice is taken. Chin further lacks reference to the use of baffles. Messinger teaches the heat sink assembly (abstract) comprising a fixed baffle (19 and partitions shown in Fig. 1) located proximate the air inlet (Fig. 1) and operative arranged to deflect air entering via the inlet and to occlude the emanation of light from the source through the air inlet (Fig. 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Chin invention include the baffles of Messinger for the purpose of greater cooling efficiency of the heat sink assembly. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Chin light source used in combination with a microscope as suggested by Chin for the purpose of allowing surgery to be performed on parts of the body too small to be easily observed with the naked eye.”

a) Claim 15

Claim 15 recites: “A microscope comprising: an air inlet; and, a fixed baffle assembly located proximate said air inlet and operatively arranged to divert air entering said microscope via said inlet and to occlude the emanation of light from said microscope through said air inlet.”

Arguments regarding a baffle located proximate an air inlet and arranged to occlude light from the air inlet are presented *supra* in 1,C,1,a of the Arguments section and in the interest of brevity are reaffirmed but not repeated.

Arguments regarding the motivation to combine and modify Chin and Messinger for purposes of surgery are presented *supra* in 1,C,1,b of the Arguments section and in the interest of brevity are reaffirmed but not repeated.

For all the reasons noted above, Claim 15 is patentable over Chin and Messinger. Claims 16-24 and 26-29, dependent from Claim 15, enjoy the same distinction with respect to Chin and Messinger.

b) Claim 30

Claim 30 recites: “A heat sink assembly for a microscope comprising: a fixed baffle located proximate an air inlet of said microscope and operatively arranged to deflect air that enters said microscope via said inlet, wherein said microscope further comprises an illumination source and said baffle occludes the emanation of light from said illumination source through said inlet; and, a heat sink located proximate said baffle and operatively arranged to transfer heat to said air.”

Arguments regarding a baffle located proximate an air inlet and arranged to occlude light from the air inlet are presented *supra* in 1,C,1,a of the Arguments section and in the interest of brevity are reaffirmed but not repeated.

Arguments regarding the motivation to combine and modify Chin and Messinger for purposes of surgery are presented in *supra* in 1,C,1,b of the Arguments section and in the interest of brevity are reaffirmed but not repeated.

For all the reasons noted above, Claim 30 is patentable over Chin and Messinger. Claims 31-34, 36-43, and 46-50, dependent from Claim 30, enjoy the same distinction with respect to Chin and Messinger.

c) Claim 51

Claim 51 recites: “A microscope comprising: an air inlet; an illumination source; and, a fixed baffle assembly operatively arranged to divert air entering said microscope via an inlet of said microscope and to occlude all direct emanation of light from said illumination source through said air inlet.

Arguments regarding a baffle arranged to occlude light from an air inlet are presented *supra* in 1,C,1,a of the Arguments section and in the interest of brevity are reaffirmed but not repeated.

Arguments regarding the motivation to combine and modify Chin and Messinger for purposes of surgery are presented *supra* in 1,C,1,b of the Arguments section and in the interest of brevity are reaffirmed but not repeated.

For all the reasons noted above, Claim 51 is patentable over Chin and Messinger.

d) Claim 52

Claim 52 recites: "A heat sink assembly for a microscope comprising: a fixed baffle assembly operatively arranged to deflect air that enters said microscope via an air inlet of said microscope and to occlude all direct emanation of light from an illumination source in said microscope through said air inlet; and, a heat sink located proximate said baffle and operatively arranged to transfer heat to said air."

Arguments regarding a baffle located proximate an air inlet and arranged to occlude light from the air inlet are presented *supra* in 1,C,1,a of the Arguments section and in the interest of brevity are reaffirmed but not repeated.

Arguments regarding the motivation to combine and modify Chin and Messinger for purposes of surgery are presented *supra* in 1,C,1,b of the Arguments section and in the interest of brevity are reaffirmed but not repeated.

For all the reasons noted above, Claim 52 is patentable over Chin and Messinger.

Appellants courteously request that the rejection be removed.

2. Whether Claims 13, 25, 44, and 45 are non-obvious under 35 U.S.C. §103(a) to a person having ordinary skill in the art at the time the invention was made and therefore patentable over U.S. Patent No. 5,295,052 (Chin) in view of U.S. Patent No. 5,076,660 (Messinger) as applied to Claims 5, 17, and 36 above, and further in view of U.S. Patent No. 6,698,200 (Rauen)?

A) Summary of the Rejection:

The Examiner rejected Claims 13, 25, 44, and 45 under 35 USC §103(a) as being unpatentable over U.S. Patent No. 5,295,052 (Chin) in view of U.S. Patent No. 5,076,660 (Messinger) as applied to Claims 5, 17, and 36 above, and further in view of U.S. Patent No. 6,698,200 (Rauen).

1) The Examiner asserted:

“Chin in combination with Messinger teaches the invention as claimed including a baseplate (14) with the air inlet disposed in the base plate (Fig. 2) but lacks reference to a thermal insulation layer. Rauen teaches the use of a thermal insulation layer between the baffles plate (60) and the base plate (Fig. 3). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the thermal insulation layer of Rauen in the Chin/Messinger invention for the purpose of preventing the heat created by the light source from adversely impacting other components of the microscope outside the heat sink assembly.”

Appellants respectfully request reversal of the Examiner’s rejection of Claims 13, 25, 44, and 45 for the reasons set forth below.

B) Brief description of the references cited by the Examiner

For purposes of providing background, Appellants briefly discuss the references cited and relied upon by the Examiner.

1) Chin

In the interest of brevity, Appellants refer to the description of Chin *supra* in 1,B,1 of the Arguments section.

2) Messinger

In the interest of brevity, Appellants refer to the description of Messinger *supra* in 1,B,2 of the Arguments section.

3) Rauen

Rauen teaches a thermodynamic engine 100 including a piston 64 operating on a compressible fluid in a thermally insulated volume. The engine includes a movable displacer 60

which selectively divides the internal volume between a warm and a cold side, and a regenerator 58 through which the fluid from the selectively divided volume passes and transfer its heat to or receives heat from. The piston and displacer are each periodically moved in various complex motions according to the present invention to provide efficiency higher than Carnot efficiency.

C) Arguments regarding the rejection of Claims 13, 25, 44, and 45

1) Claim 13

Appellants have shown that Claim 4 is patentable over Chin and Messinger. Rauen has been cited regarding the thermal insulation layer recited in Claim 13 and does not cure the defects of Chin and Messinger regarding the elements recited in Claim 4. Therefore, Claim 4 is patentable over Chin, Messinger, and Rauen. Claim 13, dependent from Claim 4, also is patentable over Chin, Messinger, and Rauen.

2) Claim 25

Appellants have shown that Claim 15 is patentable over Chin and Messinger. Rauen has been cited regarding the thermal insulation layer recited in Claim 25 and does not cure the defects of Chin and Messinger regarding the elements recited in Claim 15. Therefore, Claim 15 is patentable over Chin, Messinger, and Rauen. Claim 25, dependent from Claim 15, also is patentable over Chin, Messinger, and Rauen.

3) Claims 44 and 45

Appellants have shown that Claim 30 is patentable over Chin and Messinger. Rauen has been cited regarding the thermal insulation layer recited in Claims 44 and 45 and does not cure the defects of Chin and Messinger regarding the elements recited in Claim 30. Therefore, Claim 30 is patentable over Chin, Messinger, and Rauen. Claims 44 and 45, dependent from Claim 30, also are patentable over Chin, Messinger, and Rauen.

Appellants courteously request that the rejection be removed.

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CONCLUSION

For the reasons set forth above, Appellants respectfully submit that Claims 2-12, 14-24, 26-34, 36-43, and 46-52 are non-obvious under 35 U.S.C. §103(a) to a person having ordinary skill in the art at the time the invention was made and therefore patentable over U.S. Patent No. 5,295,052 (Chin) in view of U.S. Patent No. 5,076,660 (Messinger).

For the reasons set forth above, Appellants respectfully submit that Claims 13, 25, 44, and 45 are non-obvious under 35 U.S.C. §103(a) to a person having ordinary skill in the art at the time the invention was made and therefore patentable over U.S. Patent No. 5,295,052 (Chin) in view of U.S. Patent No. 5,076,660 (Messinger) as applied to Claims 5, 17, and 36 above, and further in view of U.S. Patent No. 6,698,200 (Rauen).

Accordingly, Appellants pray that this Honorable Board will reverse the Primary Examiner's rejection of Claims 2-34 and 36-52.

Respectfully submitted,¹



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Dated: October 11, 2006
CPM
Attachment

CLAIMS APPENDIX

Reprinted herebelow are the claims involved in this appeal:

1. (cancelled)
2. (previously presented) The microscope recited in Claim 4 wherein said heat sink assembly further comprises a heat sink and said heat sink further comprises an inner wall and an outer wall separated by an air gap.
3. (original) The microscope recited in Claim 2 wherein a first fin from said plurality of fins is connected to said outer wall and a second fin from said plurality of fins is connected to said inner wall.
4. (previously presented) A microscope comprising:
 - an air inlet;
 - an illumination source;
 - a heat sink assembly with a baffle located proximate said air inlet;
 - a lens secured to said heat sink assembly; and,
 - a plurality of fins formed at said heat sink assembly, where said plurality of fins is operatively arranged to conduct heat away from said illumination source and to transfer said heat to air passing by or over said assembly, where said baffle is operatively arranged to deflect air entering said microscope via said inlet and to occlude the emanation of light from said illumination source through said air inlet, and where said heat sink assembly and said lens are arranged to protect, from all directions, said illumination source from direct physical intrusion from outside said microscope.
5. (previously presented) The microscope recited in Claim 3 wherein said heat sink assembly further comprises a baffle plate with a baffle slot;
wherein said baffle is disposed on said baffle plate in substantial alignment with said baffle slot;
and,
wherein said baffle plate overlies said air inlet.

6. (original) The microscope recited in Claim 5 wherein said baffle plate further comprises a first plurality of baffles and a plurality of corresponding baffle slots.

7. (original) The microscope recited in Claim 6 wherein each baffle in said first plurality of baffles has a cross-section with an arcuate shape.

8. (original) The microscope recited in Claim 6 wherein each baffle in said first plurality of baffles forms an opening, between an edge of said each baffle and said baffle plate, disposed in a first direction.

9. (original) The microscope recited in Claim 6 wherein said first plurality of baffles is divided into second and third pluralities of baffles; and,

wherein each baffle in said second plurality of baffles forms an opening, between an edge of said each baffle and said baffle plate, disposed in a first direction and each baffle in said third plurality of baffles forms an opening, between an edge of said each baffle and said baffle plate, disposed in a second direction, opposite said first direction.

10. (original) The microscope recited in Claim 9 wherein said second plurality of baffles is disposed to direct air entering said microscope in said first direction and said third plurality of baffles is disposed to direct air entering said microscope in said second direction.

11. (original) The microscope recited in Claim 6 wherein said air inlet further comprises a plurality of substantially parallel inlet slots; and,
wherein said plurality of corresponding baffle slots is disposed substantially parallel to said plurality of inlet slots.

12. (original) The microscope recited in Claim 6 wherein said air inlet further comprises a plurality of substantially parallel inlet slots; and,
wherein said plurality of corresponding baffle slots is disposed substantially orthogonal to said plurality of inlet slots.

13. (original) The microscope recited in Claim 5 further comprising:

a base plate;

wherein said air inlet is disposed in said base plate; and,

wherein said baffle plate is attached to said base plate and a thermally insulating layer is

provided between said base plate and said baffle plate.

14. (original) The microscope recited in Claim 4 further comprising:

an air outlet; and,

wherein said heat sink assembly is operatively arranged to induce airflow into said air inlet, across said heat sink, and through said air outlet.

15. (previously presented) A microscope comprising:

an air inlet; and,

a fixed baffle assembly located proximate said air inlet and operatively arranged to divert air entering said microscope via said inlet and to occlude the emanation of light from said microscope through said air inlet.

16. (original) The microscope recited in Claim 15 wherein said baffle assembly further comprises a baffle located proximate said air inlet.

17. (original) The microscope recited in Claim 16 wherein said baffle assembly further comprises a baffle plate with a baffle slot; and,

wherein said baffle is disposed on said baffle plate in substantial alignment with said baffle slot.

18. (original) The microscope recited in Claim 17 wherein said baffle plate further comprises a first plurality of baffles and a plurality of corresponding baffle slots.

19. (original) The microscope recited in Claim 18 wherein each baffle in said first plurality of baffles has a cross-section with an arcuate shape.

20. (original) The microscope recited in Claim 18 wherein each baffle in said first plurality of baffles forms an opening, between an edge of said each baffle and said baffle plate, disposed in a first direction.

21. (original) The microscope recited in Claim 18 wherein said first plurality of baffles is divided into second and third pluralities of baffles; and,

wherein each baffle in said second plurality of baffles forms an opening, between an edge of said each baffle and said baffle plate, disposed in a first direction and each baffle in said third plurality of baffles forms an opening, between an edge of said each baffle and said baffle plate, disposed in a second direction, opposite said first direction.

22. (original) The microscope recited in Claim 21 wherein said second plurality of baffles is disposed to direct air entering said microscope in said first direction and said third plurality of baffles is disposed to direct air entering said microscope in said second direction.

23. (original) The microscope recited in Claim 18 wherein said air inlet further comprises a plurality of substantially parallel inlet slots; and,
wherein said plurality of corresponding baffle slots is disposed substantially parallel to said plurality of inlet slots.

24. (original) The microscope recited in Claim 18 wherein said air inlet further comprises a plurality of substantially parallel inlet slots; and,
wherein said plurality of baffle slots is disposed substantially orthogonal to said plurality of inlet slots.

25. (original) The microscope recited in Claim 17 further comprising:

a base plate;

wherein said air inlet is disposed in said base plate; and,

wherein said baffle plate is mounted to said base plate and a thermally insulating layer is provided between said base plate and said baffle plate.

26. (original) The microscope recited in Claim 15 further comprising:

an illumination source;

wherein said baffle assembly further comprises, proximate said illumination source, a heat sink having a plurality of fins operatively arranged to conduct heat away from said illumination source and to transfer said heat to air passing over said heat sink.

27. (original) The microscope recited in Claim 26 wherein said heat sink further comprises an inner wall and an outer wall separated by an air gap.

28. (original) The microscope recited in Claim 27 wherein a first fin from said plurality of fins is connected to said outer wall and a second fin from said plurality of fins is connected to said inner wall.

29. (original) The microscope recited in Claim 26 further comprising:

an air outlet; and,

wherein said baffle assembly is operatively arranged to induce airflow into said air inlet, across said heat sink, and through said air outlet.

30. (previously presented) A heat sink assembly for a microscope comprising:

a fixed baffle located proximate an air inlet of said microscope and operatively arranged to deflect air that enters said microscope via said inlet, wherein said microscope further comprises an illumination source and said baffle occludes the emanation of light from said illumination source through said inlet; and,

a heat sink located proximate said baffle and operatively arranged to transfer heat to said air.

31. (original) The heat sink assembly recited in Claim 30 wherein said heat sink further comprises an inner wall and an outer wall separated by an air gap.

32. (original) The heat sink assembly recited in Claim 30 wherein said heat sink further comprises a plurality of fins.

33. (original) The heat sink assembly recited in Claim 32 wherein said heat sink further comprises an inner wall and an outer wall separated by an air gap.

34. (original) The heat sink assembly recited in Claim 33 wherein a first fin from said plurality of fins is connected to said outer wall and a second fin from said plurality of fins is connected to said inner wall.

35. (cancelled)

36. (previously presented) The heat sink assembly recited in Claim 30 further comprising:

a baffle plate with a baffle slot;

wherein said baffle is disposed on said baffle plate in substantial alignment with said baffle slot; and,

wherein said baffle plate overlies said air inlet.

37. (original) The heat sink assembly recited in Claim 36 wherein said baffle plate further comprises a plurality of baffles and a plurality of corresponding baffle slots.

38. (original) The microscope recited in Claim 37 wherein each baffle in said first plurality of baffles has a cross-section with an arcuate shape.

39. (original) The microscope recited in Claim 37 wherein each baffle in said first plurality of baffles forms an opening, between an edge of said each baffle and said baffle plate, disposed in a first direction.

40. (original) The microscope recited in Claim 37 wherein said first plurality of baffles is divided into second and third pluralities of baffles; and,

wherein each baffle in said second plurality of baffles forms an opening, between an edge of said each baffle and said baffle plate, disposed in a first direction and each baffle in said third plurality of baffles forms an opening, between an edge of said each baffle and said baffle plate, disposed in a second direction, opposite said first direction.

41. (original) The microscope recited in Claim 40 wherein said second plurality of baffles is disposed to direct air entering said microscope in said first direction and said third plurality of baffles is disposed to direct air entering said microscope in said second direction.

42. (original) The microscope recited in Claim 37 wherein said air inlet further comprises a plurality of substantially parallel inlet slots; and,
wherein said plurality of corresponding baffle slots is disposed substantially parallel to said plurality of inlet slots.

43. (original) The microscope recited in Claim 37 wherein said air inlet further comprises a plurality of substantially parallel inlet slots; and,
wherein said plurality of baffle slots is disposed substantially orthogonal to said plurality of inlet slots.

44. (original) The heat sink assembly recited in Claim 36 wherein said microscope further comprises a base plate; and,
wherein said air inlet is disposed in said base plate and said baffle plate is mounted to said base plate.

45. (original) The heat sink assembly recited in Claim 44 wherein a thermally insulating layer is provided between said base plate and said baffle plate

46. (original) The heat sink assembly recited in Claim 30 wherein said microscope further comprises an air outlet; and,

wherein said heat sink assembly is operatively arranged to induce airflow into said air inlet, across said heat sink, and through said air outlet.

47. (original) The heat sink assembly recited in Claim 30 wherein said microscope further comprises an illumination source; and,

wherein said heat sink further comprises an aperture operatively arranged to receive said illumination source.

48. (original) The heat sink assembly recited in Claim 30 wherein said microscope further comprises a collector lens; and,

wherein said heat sink further comprises means to mount said collector lens.

49. (original) The heat sink assembly recited in Claim 30 wherein said microscope further comprises a microscope lamp assembly socket; and,

wherein said heat sink further comprises means to mount said microscope lamp assembly socket.

50. (original) The heat sink assembly recited in Claim 30 wherein said microscope further comprises a microscope lamp assembly; and,

wherein said heat sink further comprises means to guide said microscope lamp assembly.

51. (previously presented) A microscope comprising:

an air inlet;

an illumination source; and,

a fixed baffle assembly operatively arranged to divert air entering said microscope via an inlet of said microscope and to occlude all direct emanation of light from said illumination source through said air inlet.

52. (previously presented) A heat sink assembly for a microscope comprising:

a fixed baffle assembly operatively arranged to deflect air that enters said microscope via an air inlet of said microscope and to occlude all direct emanation of light from an illumination source in said microscope through said air inlet; and,

a heat sink located proximate said baffle and operatively arranged to transfer heat to said air.

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EVIDENCE APPENDIX

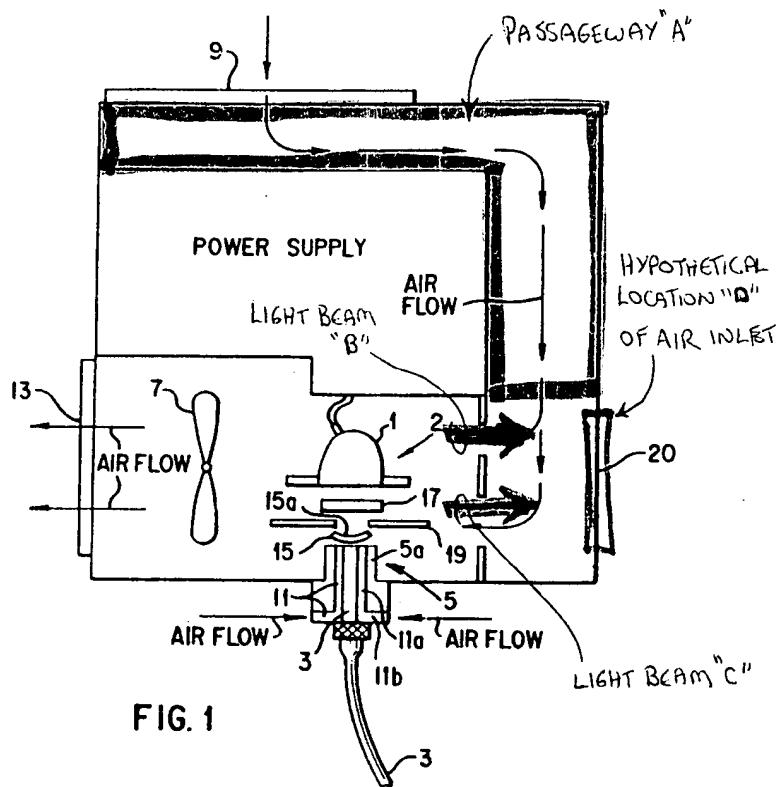


FIG. 1

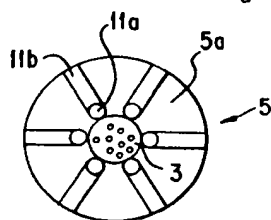


FIG. 2

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RELATED PROCEEDINGS APPENDIX

Upon information and belief, no appeals or interferences are known to Appellants, which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.